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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,257	01/29/2002	Michael J. Stevenson	STEV -113	4056

7590 12/30/2005  
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EXAMINER

HUSON, MONICA A

ART UNIT PAPER NUMBER

1732

DATE MAILED: 12/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/058,257

Applicant(s)

STEVENSON ET AL.

Examiner

Monica A. Huson

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This office action is in response to the Amendment filed 2 May 2005.

As a result of applicant's amendment, the previous rejections are withdrawn.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 rejected under 35 U.S.C. 112, second paragraph, as containing an improper alternative limitation. According to MPEP § 2173.05 (h), alternative expressions are permitted if they present no uncertainty or ambiguity with respect to the question of scope or clarity of the claims. A Markush group is an acceptable form of alternative expression and must contain the phrase "selected from the group consisting of A, B and C." See *Ex parte Markush*, 1925 C.D. 126 (Comm'r Pat. 1925). Claim 1 contains the incorrect alternative expression "selected from the class consisting essentially of...". In order to correct the claim, the examiner suggests rewording the claim as follows: "selected from the group consisting of...".

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8, 9, 14, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Stevenson et al. (U.S. Patent 4,746,961). Regarding Claim 8, Stevenson et al., hereafter "Stevenson," show that it is known to carry out a rotational molding method for fabrication of a hollow form polyethylene object in a rotational molding cycle wherein polyethylene particles are charged to a rotational mold, the mold is closed, heated to a molding temperature while being rotated about its major and minor axis for a time sufficient to form said polyethylene object and the mold is cooled to a demolding temperature, opened, and the polyethylene object is ejected (Column 2, lines 63-67); the improved method for imparting anti-microbial activity to the exterior surface of said polyethylene object which consists essentially of applying to a selected area of the interior surface of said rotational mold at substantially the demolding temperature of a coating having a thickness from 0.1 to 5 mils of an antimicrobial composition (Column 6, lines 6-10) comprising from 0.5 to 5 wt% of an antimicrobial metal selected from the group consisting of elemental and ionic silver, zinc, copper, and cadmium deposited on a solid carrier (Column 3, lines 32-35, 62; It is noted that the metal itself is being interpreted as the solid carrier.); and from 95 to 99.5 wt% of a polyethylene fusible solid selected from the group consisting of a hydrocarbon resin having a viscosity at 177°F in excess of 50 cp, polyethylene having a melt index less than 30 g/min, and mixtures thereof (Column 3, lines 32-35) ; and continuing said rotational molding cycle to obtain a molded hollow form polyethylene object having said antimicrobial composition transferred from said interior surface of said rotational mold and permanently fused into the surface of said polyethylene object (Column 2, lines 63-67; Column 5, lines 37-42; Column 7, lines 4-10).

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Regarding Claim 9, Stevenson shows the process as claimed as discussed in the rejection of Claim 8 above, including a method wherein said antimicrobial metal is silver (Column 4, line 59).

Regarding Claim 14, Stevenson shows the process as claimed as discussed in the rejection of Claim 8 above, including a method wherein said polyethylene fusible solid includes a hydrocarbon resin (Column 3, lines 29-32).

Regarding Claim 18, Stevenson shows the process as claimed as discussed in the rejection of Claim 8 above, including a method wherein said hydrocarbon resin is selected as the polyolefin fusible solid (Column 3, lines 29-32).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards et al. (U.S. Patent 4,906,466), in view of Jenett (U.S. Patent 2,628,172). Regarding Claim 1, Edwards et al., hereafter "Edwards," show that it is known to carry out a method to impart antimicrobial activity to the surface of a polymeric object (Abstract) which consists essentially of applying to the surface of an object an antimicrobial composition (Column 1, lines 10-15), said antimicrobial composition comprising 5 weight percent of an antimicrobial metal selected from the group consisting of elemental and ionic silver, zinc, copper and cadmium

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deposited on a solid carrier (Column 4, lines 50-52); 95 weight percent of a polymeric fusible solid from the group consisting of a hydrocarbon resin having a viscosity at 177°C in excess of 50 cp, polyethylene having a melt index less than 30 g/m, and mixtures thereof (Column 4, lines 50-52; It is interpreted that weight percent of the polymeric fusible solid would be the balance of 100 total weight percent minus 5 weight percent of antimicrobial metal, which is 95 weight percent.). Edwards does not explicitly show a detailed application method of an antimicrobial composition, containing polyethylene, that is carried within a liquid. Jenett shows that it is known to carry out a method of coating a polyethylene object which consists essentially of applying to the surface a liquid composition containing 15 weight percent of a polyethylene fusible solid and an additive (Column 2, lines 14-17; Column 5, lines 9-12) in a liquid carrier selected from the class consisting essentially of water and hydrocarbon solvent in sufficient quantity to permit brushing, spraying, or dipping of coating on said surface having a thickness from 0.1 to 5 mils (Column 2, lines 14-17; Column 5, lines 68-75; Column 6, lines 15-17); heating the surface of the polyethylene object to a temperature at least 250°F for sufficient time to raise the temperature of the coating and outer skin of the surface of the polyethylene object to the melt temperature of polyethylene to fuse the coating into the wall of the object (Column 2, lines 23-30; Column 4, lines 56-65). Jenett and Edwards are combinable because they are concerned with a similar technical field, namely, coated objects. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Jenett's liquid carrier and method to apply Edwards' antimicrobial coating in order to most efficiently and uniformly provide a coating material on a specifically-desired article.

Regarding Claim 2, Edwards shows the process as claimed as discussed in the rejection of Claim 1 above, including a method wherein said antimicrobial metal is silver (Column 1, lines 23-25), meeting applicant's claim.

Regarding Claim 3, Edwards shows the process as claimed as discussed in the rejection of Claim 1 above, including a method wherein said carrier solid is an ion-exchange solid and said antimicrobial metal is ion-exchanged onto said carrier solid (Column 1, lines 66-68; Column 2, lines 1-8), meeting applicant's claim.

Regarding Claim 4, Edwards shows the process as claimed as discussed in the rejection of Claim 3 above, including a method wherein said ion-exchange solid is zeolite (Column 1, lines 67-68), meeting applicant's claim.

Regarding Claim 5, Edwards shows the process as claimed as discussed in the rejection of Claim 3 above, including a method wherein said antimicrobial metal includes zinc (Column 1, lines 52-53), meeting applicant's claim.

Regarding Claim 6, Edwards shows the process as claimed as discussed in the rejection of Claim 1 above, but he does not show using polyethylene as the polyethylene fusible solid. Jenett shows that it is known to carry out a method wherein said polyethylene fusible solid is polyethylene (Column 2, lines 14-17). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Jenett's polyethylene as the fusible solid in Edwards' composition in order to produce an article having the characteristics of molded polyethylene.

Regarding Claim 7, Edwards shows the process as claimed as discussed in the rejection of Claim 1 above, but he does not show using a hydrocarbon resin as the polyethylene fusible

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solid. Jenett shows that it is known to carry out a method wherein said polyethylene fusible solid is a hydrocarbon resin (Column 2, lines 14-17). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Jenett's polyethylene as the fusible solid in Edwards' composition in order to produce an article having the characteristics of molded hydrocarbon resin.

Regarding Claim 17, Edwards shows the process as claimed as discussed in the rejection of Claim 1 above, but he does not show using a hydrocarbon resin as the polyolefin fusible solid. Jenett shows that it is known to carry out a method wherein said hydrocarbon resin is selected as said polyolefin fusible solid (Column 2, lines 14-17). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Jenett's hydrocarbon resin as the fusible solid in Edwards' composition in order to produce an article having the characteristics of molded hydrocarbon resin.

Regarding Claim 19, Edwards shows the process as claimed as discussed in the rejection of Claim 1 above, but he does not show using a hydrocarbon solvent as the liquid carrier. Jenett shows that it is known to carry out a method wherein the liquid carrier is a hydrocarbon solvent (Column 2, lines 44-48). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Jenett's hydrocarbon solvent as a liquid carrier for Edwards' composition in order to ease the process of providing a uniform coating material on a specifically-desired article.

Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevenson, in view of Edwards.



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Regarding Claim 10, Stevenson shows the process as claimed as discussed in the rejection of Claim 8 above, but he does not show using an ion-exchange carrier solid. Edwards shows that it is known to carry out a method including one wherein said carrier solid is an ion-exchange solid and said antimicrobial metal is ion-exchanged onto said carrier solid (Column 1, lines 66-68; Column 2, lines 1-8). Edwards and Stevenson are combinable because they are concerned with a similar technical field, namely, coated objects. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Edwards' ion-exchange carrier solid in Stevenson's process in order to facilitate the formation of a uniform enhancement coating.

Regarding Claim 11, Stevenson shows the process as claimed as discussed in the rejection of Claim 10 above, but he does not show a specific ion-exchange solid. Edwards shows that it is known to carry out a method including one wherein the ion-exchange solid is zeolite (Column 1, lines 67-68). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Edwards' zeolite in Stevenson's process in order to facilitate the formation of a uniform enhancement coating.

Regarding Claim 12, Stevenson shows the process as claimed as discussed in the rejection of Claim 10 above, including a method wherein the antimicrobial metal includes zinc (Column 3, line 62), meeting applicant's claim.

Claims 13, and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevenson, in view of Jenett.

Regarding Claim 13, Stevenson shows the process as claimed as discussed in the rejection of Claim 8 above, but he does not show polyethylene as his polyethylene fusible solid. Jenett shows that it is known to carry out a method wherein said polyethylene fusible solid is polyethylene (Column 2, lines 14-17). Jenett and Stevenson are combinable because they are concerned with a similar technical field, namely, coated articles. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Jenett's specific polyethylene as the polyethylene fusible solid of Stevenson in order to produce an article whose coating has the characteristics of molded polyethylene.

Regarding Claim 23, Stevenson shows the process as claimed as discussed in the rejection of Claim 8 above, including showing that the coating is applied to the selected area of the interior surface of said rotational mold by spraying said area (Column 3, lines 3-13), but he does not show a specific composition of his coating. Jenett shows that it is known to carry out a method wherein said coating with a liquid carrier contains 15 weight percent of a polyethylene fusible solid and an additive (Column 2, lines 14-17; Column 5, lines 9-12). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to produce an article whose coating meets specific end-use characteristics that require 15 weight percent of a polyethylene fusible solid and an additive.

Regarding Claim 24, Stevenson shows the process as claimed as discussed in the rejection of Claim 23 above, but he does not show using a hydrocarbon solvent as a liquid carrier. Jenett shows that it is known to carry out a method wherein said liquid is a hydrocarbon solvent (Column 2, lines 44-48). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Jenett's hydrocarbon solvent as a liquid

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carrier during Stevenson's process in order to ease the process of providing a uniform coating material on a specifically-desired article.

Regarding Claim 25, Stevenson shows the process as claimed as discussed in the rejection of Claim 24 above, but he does not show using hexane as a hydrocarbon solvent. Jenett shows that it is known to carry out a method wherein said hydrocarbon solvent is hexane (Column 3, lines 33-35). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Jenett's hexane as a liquid carrier during Stevenson's process in order to ease the process of providing a uniform coating material on a specifically-desired article.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards and Jenett, further in view of Gupta (U.S. Patent 6,284,814). Edwards shows the process as claimed as discussed in the rejection of Claims 1 and 6 above, but he does not specify a certain melt index of his coating fusible solid. Gupta shows that it is known to carry out a method of imparting an antimicrobial characteristic to an article, wherein the polyethylene in the coating composition has a melt index of less than 20 grams/minute (Column 3, lines 66-67; Column 4, lines 1-2). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Gupta's polyethylene in Edwards' molding process in order to ensure that the coating possesses the desired flow properties for the specific application.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stevenson and Jenett, further in view of Zwart (U.S. Patent 6,428,733). Stevenson shows the process as

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claimed as discussed in the rejection of Claims 8 and 13 above, but he does not specify a certain melt index of his coating fusible solid. Zwart shows that it is known to carry out a method of imparting an antimicrobial characteristic to an article, wherein the polyethylene in the coating composition has a melt index of less than 20 grams/minute (Column 6, lines 8-9; Column 10, lines 20-23). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Zwart's polyethylene in Stevenson's molding process in order to ensure that the coating possesses the desired flow properties for the specific application.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards and Jenett, further in view of Huang (U.S. Patent 5,089,205). Edwards shows the process as claimed as discussed in the rejection of Claim 1 above, but he does not show using a surfactant in a liquid carrier. Huang et al., hereafter "Huang," show that it is known to carry out a method of imparting antimicrobial activity wherein a liquid carrier is a water containing from 0.1 to 2 weight percent of a surfactant sufficient to form a stable dispersion of said antimicrobial composition (Column 2, lines 49-57). Huang and Edwards are combinable because they are concerned with a similar technical field, namely, methods of producing antimicrobial articles. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Huang's surfactant in Edwards' coating process in order to provide the desired amount and strength of antimicrobial properties to an article.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards and Jenett, further in view of Oakes (U.S. Patent 4,999,386). Edwards shows the process as claimed

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as discussed above in the rejection of claims 1 and 19 above, but he does not show using a specific concentration of antimicrobial agent in a liquid carrier. Oakes shows that it is known to have a liquid carrier that contains 25-35 weight percent antimicrobial agent (Column 6, lines 48-49). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Oakes' liquid carrier's antimicrobial composition in Edwards' coating process in order to achieve the desired level of microbe protection.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards, Jenett, and Haung, further in view of Oakes. Edwards shows the process as claimed as discussed above in the rejection of claims 1 and 20 above, but he does not show using a specific concentration of antimicrobial agent in a liquid carrier. Oakes shows that it is known to have a liquid carrier that contains 25-35 weight percent antimicrobial agent (Column 6, lines 48-49). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Oakes' liquid carrier's antimicrobial composition in Edwards' coating process in order to achieve the desired level of microbe protection.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

*Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following documents are cited to further show the state of the art with regard to imparting enhancements to the surface of molded articles in general:

U.S. Patent Application Publication 2001/0051222 to Stevenson et al.

U.S. Patent 6,815,005 to Stevenson et al.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

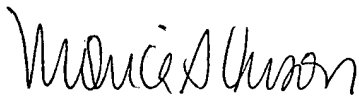
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica A. Huson whose telephone number is 571-272-1198. The examiner can normally be reached on Monday-Friday 7:30am-5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Colaianni can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Monica A Huson  
December 21, 2005

  
MICHAEL P. COLAIANNI  
SUPERVISORY PATENT EXAMINER